

WE CLAIM:

1. A method of policing packet traffic comprising:

5 policing packets of a first class in accordance with
at least one policing parameter associated with the first
class;

10 policing packets of a second class in accordance with
at least one policing parameter associated with the second
class in a manner which gives to the second class at least a
portion of a traffic throughput afforded to the first class by
at least one of said at least one policing parameter associated
with the first class of traffic which is not being used by the
packets of the first class.

15 2. A method according to claim 1 wherein the at least
one policing parameter associated with the first class
comprises a first class rate guarantee, and wherein the at
least one of said at least one policing parameter associated
with the first class of traffic is said first class rate
guarantee.

20 3. A method according to claim 1 wherein the at least
one policing parameter associated with the first class
comprises a rate guarantee and a burst tolerance, and wherein
the at least one of said at least one policing parameter
associated with the first class of traffic comprises both the
rate guarantee and the burst tolerance.

25 4. A method according to claim 1 wherein the at least
one policing parameter associated with the second class
comprises a second class rate guarantee, wherein:

the first class of traffic is policed in accordance
with the first class rate guarantee, with traffic being either

marked as conforming if allowed by the rate guarantee and non-conforming if found to exceed the first class rate guarantee;

the second class of traffic is policed such that conforming first class traffic plus second class traffic does
5 not exceed the first class rate guarantee plus the second class rate guarantee.

5. A method of policing traffic comprising:

defining a traffic class rate guarantee for each of a plurality of traffic classes to be provided by a service, and a
10 service rate guarantee for the service;

policing combined traffic containing traffic of each of the plurality of traffic classes in a manner which guarantees each class its respective traffic class rate guarantee, and in a manner which guarantees the service rate
15 guarantee for the combined traffic.

6. A method according to claim 5 further comprising:

for each of the plurality of traffic classes, policing a respective combined traffic class comprising that traffic class plus all conforming higher class traffic, the
20 policing being done at a rate equal to the traffic class rate guarantee for that traffic class plus the traffic class rate guarantees for at least one higher class of traffic.

7. A method according to claim 6 further comprising:

policing each traffic class such that the respective
25 combined flow of that traffic class plus all conforming higher class traffic is done at a rate equal to the traffic class rate guarantee plus the traffic class rate guarantees for all higher classes of traffic.

8. A method of policing a plurality N of traffic classes C_i , each having a respective rate guarantee R_i , $i=1, \dots, N$, $N \geq 2$ the method comprising:

policing traffic of class C_1 according to rate R_1 ;

5 for each other class C_i , policing traffic of class C_i plus conforming traffic of class(es) C_1, \dots, C_{i-1} according to an aggregate rate $RA_i = \sum_{i=1}^N R_i$.

9. A method according to claim 8 wherein each traffic class C_i has a respective burst tolerance BT_i , the method
10 further comprising:

policing traffic of class C_1 according to BT_1 ;

for each other class C_i , policing traffic of class C_i plus conforming traffic of class(es) C_1, \dots, C_{i-1} according to an aggregate burst tolerance $BA_i = \sum_{i=1}^N BT_i$.

15 10. A policer adapted to implement a method according to claim 1.

11. A policer adapted to implement a method according to claim 5.

12. A policer according to claim 10 implemented as an
20 application specific integrated circuit.

13. A policer according to claim 11 implemented as an application specific integrated circuit.

14. A policer according to claim 10 implemented as software running on a processor.

15. A policer according to claim 11 implemented as software running on a processor.

5 16. A processing platform readable medium having stored thereon processing platform executable instructions which when executed:

police packets of a first class in accordance with at least one policing parameter associated with the first class;

10 police packets of a second class in accordance with at least one policing parameter associated with the second class in a manner which gives to the second class at least a portion of a traffic throughput afforded to the first class by at least one of said at least one policing parameter associated
15 with the first class of traffic which is not being used by the packets of the first class.

17. An apparatus comprising:

an input for receiving packets of multiple different classes of a single service including a first class and a
20 second class;

a policer adapted to police packets of the first class in accordance with at least one policing parameter associated with the first class;

the policer being further adapted to police packets
25 of the second class in accordance with at least one policing parameter associated with the second class in a manner which gives to the second class at least a portion of a traffic throughput afforded to the first class by at least one of said

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at least one policing parameter associated with the first class of traffic which is not being used by the packets of the first class;

the policer being adapted to mark each packet as
5 being conforming or non-conforming.

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